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COMMENTARY

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Intracerebral haemorrhage – initial actions are critical

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As newer time-dependent therapies become available for patients with cerebrovascular diseases, emergency physicians must become more comfortable in the diagnosis and management for these patients. This is true of both ischaemic and haemorrhagic stroke.

As Marietta and colleagues point out in their excellent review on intracerebral haemorrhage (ICH) [1], airway consideration is always the priority, not only to protect the airway, but also to prevent secondary brain injury from hypoxia and hypercarbia. When intubating, many emergency physicians pre-treat with lidocaine and fentanyl, and some administer a defasciculating dose of vecuronium, all to prevent transient increases in intracranial pressure. While the supporting data for these interventions are weak, there are minimal associated risks.

Marietta's review focuses on the most common causes of ICH – hypertension, cerebral amyloid angiopathy and oral anticoagulant therapy; however, some causes such as aneurysms and arteriovenous malformations can present in an identical fashion, and require definitive therapy. Therefore, cerebrovascular imaging should be considered in selected ICH patients, particularly in young, normotensive ones who are surgical candidates [2].

The current review also discusses the STICH study [3]. This investigation has two important limitations. Firstly, it did not test the hypothesis that very early surgery helps; many patients in the surgical arm did not have their procedure in the first 12 h from onset of symptoms. Secondly, 26% of the patients randomised to conservative treatment later crossed over and had surgery for neurological deterioration. Because they were (by definition) surgical candidates, earlier surgery in this group may have changed the overall results. So, while the STICH study shows that surgical evacuation should not be routinely applied, early neurosurgical consultation is still an important emergency action.

The other important recently published study of ICH is a randomised trial of recombinant factor VII [4]. This preliminary study tested various doses of factor VII *vs*. placebo within 4 h of symptom onset in nearly 400 patients with ICH. There are therapeutic benefits, but as one might anticipate, thromboembolic events (myocardial infarction and stroke) were more common in the treatment group than the placebo group (though not statistically significant – 7% *vs*. 2%, p=0.12). This drug is very expensive. Emergency physicians ought to be aware of this treatment because some experts have begun to use it off-label. Phase III study results will soon be available but as of January 2007 this treatment is not FDA-approved in the USA for this indication.

Blood pressure control is another key issue for emergency physicians. Here, there is a paucity of quality data. While the AHA recommends not treating blood pressure of <180/105 mmHg, decisions must be individualised. It is the cerebral perfusion pressure and the underlying vascular lesion that clinicians must consider. Blind adherence to a specific target blood pressure in all patients may do more harm than good. The PROGRESS trial referred to in the closing paragraph of Marietta's review refers to secondary stroke prevention using long-term antihypertensives [5]. This should not be misinterpreted as proof that acutely lowering blood pressure improves outcomes in ICH patients.

Marietta's superb review of this important and common problem is well worth reading. Applied intelligently, airway management, blood pressure control, use of pro-thrombotic agents and neurosurgical consultation in the emergency department can have a favourable significant impact on long-term outcomes of patients with ICH.

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